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| 10/699,907 | 11/03/2003 | Martin Moeller | 2784 | 4580 |
| <div>7590 02/08/2007</div> <div>STRIKER, STRIKER & STENBY</div> <div>103 East Neck Road</div> <div>Huntington, NY 11743</div> | | | | |
| | | | <div>EXAMINER</div> <div>MERCADO, JULIAN A</div> | |
| | | | <div>ART UNIT</div> <div>1745</div> | <div>PAPER NUMBER</div> |
| | | | <div>MAIL DATE</div> <div>02/08/2007</div> | <div>DELIVERY MODE</div> <div>PAPER</div> |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/699,907

Applicant(s)

MOELLER ET AL.

Examiner

Julian Mercado

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2007 and 03 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☒ Other: Interview Summary.

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DETAILED ACTION

Remarks

This Office action is responsive to applicant's amendment filed on November 3, 2006 and January 26, 2007.

Claims 1-13 are pending, of which claim 13 is newly submitted.

Claim Rejections - 35 USC § 112

The rejection of claims 1-12 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement has been withdrawn.

The examiner has reconsidered the enablement rejection of claims 1-12 in view of further consideration of page 8 line 17 of the specification, which states that "selection of the plastic is performed according to the hydrogen permeation at the appropriate operating temperature and/or the type of undesired gases."

Applicant's submission of Appendix A has been considered. The examiner concedes with the assertion that the skilled artisan would know and recognize suitable membranes for hydrogen gas separation.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the plastic membrane" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 in line 8 and claim 11 in line 8 recite a similar limitation to claim 1 and are thus rejected under the same grounds.

Claims 2-7, 9, 10, 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art ("AAPA") in view of Weller (U.S. Pat. 2,540,152).

Applicant's admitted prior art ("AAPA") has been discussed in a prior Office action. A reiteration here follows. Pages 2-3 of the specification states that in the field of fuel cell technology, "[m]etal membranes have already been used to remove, at least in part, the undesirable gases, such as CO and CO₂, produced in the reforming process." See page 3 line 19 et seq.

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AAPA, as set forth in the prior Office action, does not teach a plastic membrane. However, Weller teaches a plastic membrane such as one made of polystyrene. See col. 5 line 54 et seq. The plastic membrane allows for hydrogen diffusion in molecular form therethrough, such as when hydrogen is in a gaseous state. See col. 4 lines 10-17. And in a similar manner as by AAPA, Weller also discloses *metal* membranes for hydrogen gas separation, but further discloses that these metal membranes, such as thin films of platinum or palladium, are undesirably cost-prohibitive. See col. 1 lines 42-49. Additionally, the skilled artisan would find obvious to modify AAPA by employing a plastic membrane in view of its “extremely high” selectivity, as it is over five times more selective. See col. 4 lines 6-10 and col. 10 line 64 et seq.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant’s admitted prior art (“AAPA”) in view of Weller (U.S. Pat. 2,540,152), and further in view of Leboe et al. (U.S. Pat. 6,893,755 B2).

The teachings of AAPA and Weller are discussed above.

Leboe et al. teaches a feedback device [26] which also contains a membrane unit. See col. 6 line 54 et seq. The skilled artisan would find obvious to further modify AAPA by employing a feedback device in order to ensure a preferred target set point for the hydrogen pressure. See col. 8 line 27 et seq.

Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant’s admitted prior art (“AAPA”) in view of Weller (U.S. Pat. 2,540,152), and further in view of Reiser. (U.S. Pat. 6,558,827 B1).

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The teachings of AAPA and Weller are discussed above.

Reiser is relied upon to teach a fuel cell wherein a hydrogen-containing partial stream [41] originates from the anode. See col. 2 lines 61-65. The skilled artisan would find obvious to further modify AAPA such that a hydrogen-containing partial stream originates from the anode. The motivation for such a modification would be to “maintain a relatively uniform hydrogen composition across the anode flow field.” (ib.)

Response to Arguments

Applicant's arguments with respect to the present claims have been considered but are moot in view of the new ground(s) of rejection. For the foregoing reasons above, it is asserted that the combination of AAPA and Weller teaches or at least suggests the instant plastic membrane configured to be permeable to molecular hydrogen.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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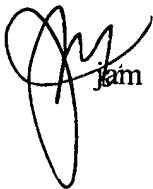
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



jam



PATRICK J. RYAN
SUPERVISOR